

Work Order ID 60944

Wednesday, July 28, 2010 1:12:04 PM



Page 1

Item ID: D6104-005

Accept



Setup Start



Revision ID:

Stop



Item Name: Round Billet, 17-4

Start Date: 7/28/2010 Start Qty: 5.00



Cust Item ID:

Required Date: 8/6/2010 Req'd Qty: 5.00



Customer:

Reference:

Approvals:

Process Plan: *H*Date: *10-7-28*

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D6104

Rev B

100

0.00



PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: *12345* ☐ a) Description: S.S round billet ☐ b) Ø4.00" x
5.10" long ☐ c) Tolerance on all dimensions are +0.030"/-0.000" ☐ d) Material:
17-4PH Stainless steel (Ams 5643 or Aisi 630) ☐ e) One blank makes 2 parts ☐ f)
Material certification required

P/10-7-28
(5)

110

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure material certification is attached

cd 10/8/17
(5)

120

QC6- Inspect dimensions to drawing

0.00



QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6104

*OK 10/8/17**50*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 60944

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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130



Packaging

Identify as per dwg & Stock Location: *MAT*

0.00

amk 10/08/19

Memo

0.00

*5**0*

140



QC

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

*10/08/19**CD 10/08/19*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, July 28, 2010 1:12:08 PM

Page 1

Work Order ID: 60944



Parent Item: D6104-005



Parent Item Name: Round Billet, 17-4


Start Date: 7/28/2010

Required Date: 8/6/2010

Start Qty: 5.00

Required Qty: 5.00

Comments: IPP A: ☐01.05.08 ☐New Issue EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-005P  17-4 SS Roundbar 4.00"OD		Purchased	No			110	Each	0.0000	1	5		07/28/10	5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

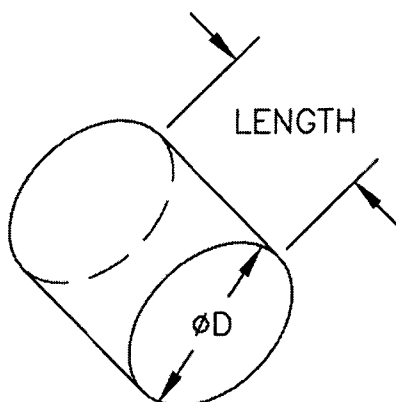
NOTE: Date & initial all entries



DESIGN <i>FT</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED
02.11.29 *[Signature]*

SPECIFICATION CONTROL DRAWING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 60944
PS 10-7-28

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

[Signature]
10/08/19

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:451392

Ship From: Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 16-AUG-10	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier LOCAL FLEET		BOL No 451392-4	

Shipment Details	Final Destination Branch - MON
-------------------------	---------------------------------------

Order No 906954	Line No 1	Item No 42464.MO <i>2108117</i>	Description 4.0000.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 5.1 IN (+ 0.30/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS-5643				
Purchase Order No 12345		Part Number		Ordered Qty 5 PCS		Invoice Qty 5 PCS	
Details							
Delivery No. 38394297	Mill	Heat Number 423013	Mech Id	PCS 5	Width (IN)	Length (IN)	Shipped Qty (LBS) 93.65

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.			
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.			
Reviewed by Authorized Castle Metals Representative:		Date:	

mk
10/08/10

**VALBRUNA**

SLATER STAINLESS, INC.
 2400 Taylor Street West, P.O. Box 630
 Fort Wayne, Indiana USA 46801
 Phone: 280-434-2892 Fax: 280-434-2906

Product Certification Report**Report Number: 4535900**

IC
H2464

Certified on Apr 28, 2010 Page 1 of 2

Order I.D. 1000963 005		Order Date 4/08/10		Commodity Code 6304.0RT	
Dim 1 4.0000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 423013	Customer I.D. 002472	Customer Purchase Order 26918
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 630
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 411913	Weight	

**Ship
To**

VALBRUNA STAINLESS, INC
370 VILLAGE DRIVE
CAROL STREAM, IL. 60188

**Sold
To**

VALBRUNA STAINLESS, INC.
370 VILLAGE DRIVE
CAROL STREAM, IL 60188

Lifts: 0046

API 6A AISI 17400 EN 10204 3.1

UNS S17400

AMS 5643R (except finish) ASTM 564-04 Type 630 ASTM A484-08

ASMESA-564-07

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.04	.59	.023	.022	.41	15.68	4.68	.18	3.37	.04	.23	.001	.23

BRINELL HARDNESS ASTM E10-08

HBW

358

TENSILE PROPERTIES ASTM E8-08**CAPABILITY**

Cap HB	TS (PSI)	.2%YS (PSI)	%EL(4d)	%RA	AGE(F)
400	205000	183000	15.8	50.4	900

MAGNETIC PARTICLE TEST

FREQ SEV

AVG .04 .02

MACRO ASTM E340-00/E381-01

MACRO

OK

OK

OK

PERCENT FERRITE

% FERRITE

AVG .9

Reduction ratio 5 To 1 Min.

Electric Furnace melted; AOD refined.

Ultrasonic test OK.

Chemical testing performed to one or more of the following ASTM methods: E415-08, E572-02a, E1019-08, E1085-95,

Location of tensile fracture: inside middle of gage length.

Chemical Analysis performed at Acciaierie Valbruna, Italy.

No mercury or low melting alloy contamination. No weld repair.

Material melted in Italy, manufactured in the United States.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett

Dennis Hackett

GWH
10/6/8/19

**VALBRUNA****SLATER STAINLESS, INC.**2400 Taylor Street West, P.O. Box 630
Fort Wayne, Indiana USA 46801
Phone: 260-434-2882 Fax: 260-434-2806**Product Certification Report****Report Number: 4535900****Certified on Apr 28, 2010 Page 2 of 2**

Order I.D. 1000963 005		Order Date 4/08/10		Commodity Code 6304.0RT	
Dim 1 4.0000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 423013	Customer I.D. 002472	Customer Purchase Order 26918
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**Ship
To**VALBRUNA STAINLESS, INC
370 VILLAGE DRIVE
CAROL STREAM, IL. 60188**Sold
To**VALBRUNA STAINLESS, INC.
370 VILLAGE DRIVE
CAROL STREAM, IL 60188

Material conforms to listed specifications and is DFARS compliant.

Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1.

Castle Metals FP

HEAT NUMBER 423013
MECHANICAL ID _____
ITEM CODE 42464
LOT NUMBER _____
PO NUMBER 62966
RECEIPT DATE 10-16-2010
SUPPLIER VALBRUNA
SPECIFICATION _____
LCS NO
COMMENT _____
APPROVED DL

and
10/08/19

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

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